

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau



(43) International publication date
4 November 2004 (04.11.2004)

PCT

(10) International publication number
WO 2004/095341 A2

(51) International patent classification⁷:

G06F 19/00

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(21) International application number:

PCT/DE2004/000839

(22) International filing date:

16 April 2004 (16.04.2004)

(25) Language of filing:

German

(26) Language of publication:

German

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(30) Data relating to the priority:

103 18 887.8	17 April 2003 (17.04.2003)
103 31 110.6	4 July 2003 (04.07.2003)

DE

DE

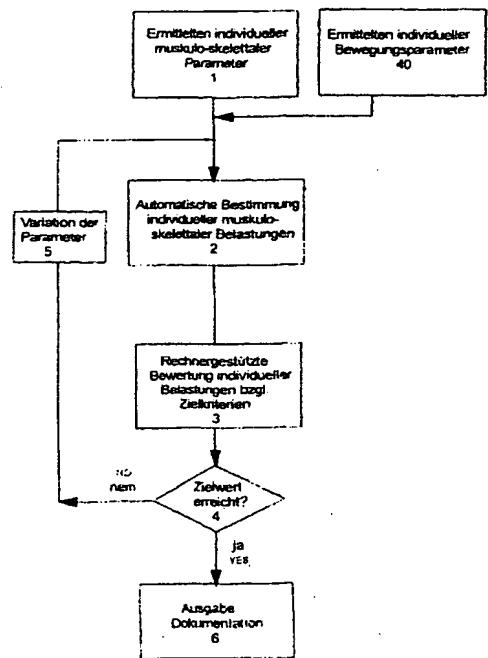
(81) Designated states (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ,

[continued on next page]

As printed

(54) Title: METHOD FOR SIMULATING MUSCULOSKELETAL STRAINS ON A PATIENT

(54) Bezeichnung: VERFAHREN ZUR SIMULATION MUSKULO-SKELETTALER BELASTUNGEN EINES PATIENTEN



- 1. DETERMINE INDIVIDUAL MUSCULOSKELETAL PARAMETERS.
- 2. DETERMINE INDIVIDUAL MOVEMENT RELATED PARAMETERS
- 3. VARY PARAMETERS
- 4. AUTOMATICALLY DETERMINE INDIVIDUAL MUSCULOSKELETAL STRAINS
- 5. COMPUTER ASSISTED EVALUATION OF INDIVIDUAL STRAINS REGARDING TARGET CRITERIA
- 6. TARGET VALUE REACHED?
- 7. OUTPUT DOCUMENTATION

(57) Abstract: The invention relates to a method and a device for simulating musculoskeletal strains on a patient, especially for preparing or monitoring surgical interventions and/or planning and/or monitoring rehabilitation. According to the invention, individual musculoskeletal parameters of the patient are determined first, particularly by automatically measuring anthropometric parameters and/or the position and/or alignment of joints, especially also gait-related data such that individual musculoskeletal strains are automatically determined from the determined musculoskeletal parameters of the patient. The individual musculoskeletal strains thus determined are evaluated in a computer-assisted manner regarding at least one target criterion, particularly the contact forces or the degree of motion of a joint or the fragment movements of a fracture. The aim of the invention is to create a method for evaluating musculoskeletal strains on a patient, by means of which above all surgical interventions or rehabilitative measures can be improved.

(57) Zusammenfassung: Die Erfindung betrifft ein Verfahren und eine Vorrichtung zur Simulation muskulo-skelettaler Belastungen eines Patienten, insbesondere zur Vorbereitung bzw. Überwachung operativer Eingriffe und/oder zur Planung bzw. Überwachung der Rehabilitation. Dazu werden zunächst individuelle muskulo-skelettale Parameter des Patienten, insbesondere durch automatische Messung anthropometrischer Parameter und/oder der Lage und/oder Orientierung von Gelenken ermittelt, insbesondere auch Gangdaten. Danach werden individuelle muskulo-skelettale Belastungen aus den ermittelten muskulo-skelettalen Parametern des Patienten automatisch bestimmt. Die so bestimmten individuellen muskulo-skelettalen Belastungen werden rechnergestützt hinsichtlich mindestens eines Zielkriteriums, insbesondere hinsichtlich der Kontaktkräfte oder des Bewegungsausmaßes eines Gelenkes oder hinsichtlich der Fragmentbewegungen einer Fraktur bewertet. Die Erfindung löst die Aufgabe, ein Verfahren zur Bewertung

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CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- without international search report and to be republished upon receipt of that report

For an explanation of the two-letter codes and the other abbreviations, reference is made to the explanations ("Guidance Notes on Codes and Abbreviations") at the beginning of each regular edition of the PCT Gazette.

(84) **Designated states** (unless otherwise indicated, for every kind of regional protection available): ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE,